## SEQUENCE LISTING

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        Frazer, Ian Hector and Zhou, Jian (US only)
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 <151> 2000-01-07
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Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
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Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

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Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 150

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

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				att Ile												432
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230

Leu Tyr Lys

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tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
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Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
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gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
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Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
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tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
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Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
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                                105
acc ege get gaa gte aag tte gaa ggt gae acc etg gtg aat aga ate
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Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

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														ctc Leu		144
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Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His
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Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Ile
Glu	Asp	Gly	Ser 180	Val	Gln	Leu	Ala	Asp 185	His	Tyr	Gln	Gln	Asn 190	Thr	Pro
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr
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Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
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		agc Ser 35														144
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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
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Ile Gly As	ac ggc cct sp Gly Pro 95	gtg ctc ct Val Leu Le 20	eu Pro Asp	aac cat tac ( Asn His Tyr : 205	ctg tcc a Leu Ser T	cc 624 hr

cag tct gcc Gln Ser Ala 210	_	_		_		-	_	_	672
ctg ctg gag Leu Leu Glu 225	Phe Val			Ile Th				, ,	720
ctg tac aag Leu Tyr Lys	tga								732
<210> 24 <211> 243 <212> PRT <213> Artif	icial Seq	uence							
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Val Pro Ile	Leu Val ( 20	Glu Leu	Asp Gly 25	Asp Va	al Asn	Gly Hi 3		Phe	
Ser Val Ser 35		Gly Glu	Gly Asp 40	Ala Th	hr Tyr	Gly Ly 45	s Leu	Thr	
Leu Lys Phe 50	Ile Cys '	Thr Thr 55	Gly Lys	Leu Pi	ro Val 60	Pro Tr	o Pro	Thr	
Leu Val Thr 65	Thr Phe	Ser Tyr 70	Gly Val	_	ys Phe 75	Ser Ar	g Tyr	Pro 80	
Asp His Met	Lys Gln 1 85	His Asp	Phe Phe	Lys Se	er Ala	Met Pr	o Glu 95	Gly	
Tyr Val Gln	Glu Arg '	Thr Ile	Phe Phe 105	Lys As	sp Asp	Gly As		Lys	

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His

135

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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
145
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
    210
                        215
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
Leu Tyr Lys
<210> 25
<211> 732
<212> DNA
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<220>
<223> Description of Artificial Sequence: Asp(GAC)5GFP
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<222> (1)..(732)
<400> 25
atg gac gac gac gac agc agg gag gag ctg ttc act ggc gtg
Met Asp Asp Asp Asp Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                  96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
                                 25
tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
                                                                  144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
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35		40	45	
			ctc cct gtg cca Leu Pro Val Pro 60	
			cag tgc ttt tcc Gln Cys Phe Ser 75	
			aag agc gcc atg Lys Ser Ala Met 90	
			aaa gat gac ggg Lys Asp Asp Gly	_
			gac acc ctg gtg Asp Thr Leu Val 125	
			gat gga aac att Asp Gly Asn Ile 140	
			aat gtg tac atc Asn Val Tyr Ile 155	
			ttc aag atc aga Phe Lys Ile Arg 170	
			cat tat caa cag His Tyr Gln Gln	
	Gly Pro Val		gac aac cat tac Asp Asn His Tyr 205	
			gaa aag aga gac Glu Lys Arg Asp 220	

ctg ctg gag ttt gtg acc gct gct ggg atc aca cat ggc atg gac gag Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240	720
ctg tac aag tga Leu Tyr Lys	732
<210> 26 <211> 243 <212> PRT <213> Artificial Sequence	
<400> 26 Met Asp Asp Asp Asp Ser Lys Gly Glu Glu Leu Phe Thr Gly Val 1 5 10 15	
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30	
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45	
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 60	
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80	
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95	
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110	
Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125	
Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140	
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160	

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Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
                                    170
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
                        215
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
Leu Tyr Lys
<210> 27
<211> 732
<212> DNA
<213> Artificial Sequence
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<220>
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<222> (1)..(732)
<400> 27
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                                                                   48
Met Asp Asp Asp Asp Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
                                 25
tet gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
                             40
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
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	50					55					60					
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	G] À dàd	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720

ctg tac aag tga Leu Tyr Lys 732

<210> 28

<211> 243

<212> PRT

<213> Artificial Sequence

<400> 28

Met Asp Asp Asp Asp Ser Lys Gly Glu Glu Leu Phe Thr Gly Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro

			180					185					190			
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr	
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val	
Leu 225	Leu	Glu	Phe	Val	Thr 230	Ala	Ala	Gly	Ile	Thr 235	His	Gly	Met	Asp	Glu 240	
Leu	Tyr	Lys														
<211 <212	)> 29  > 73  > Di  3> Ai	32	icial	l Sed	quenc	ce										
<220 <223		escri	iptio	on of	E Art	cific	cial	Seqı	ience	e: C <u>y</u>	ys(TO	GC) 50	GFP			
	> CI	os l)	(732)	)												
	)> 29															
atg Met 1	tgc Cys	tgc Cys	tgc Cys	tgc Cys 5	tgc Cys	agc Ser	aag Lys	ggc Gly	gag Glu 10	gaa Glu	ctg Leu	ttc Phe	act Thr	ggc Gly 15	gtg Val	48
gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro	240

65					70					75					80	
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
ctg Leu		aag Lys	tga													732

- <210> 30
- <211> 243
- <212> PRT
- <213> Artificial Sequence
- <400> 30
- Met Cys Cys Cys Cys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val 1 5 15
- Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30
- Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45
- Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60
- Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80
- Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
  85 90 95
- Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110
- Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125
- Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140
- Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160
- Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175
- Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190
- Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

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Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
    210
                        215
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
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Leu Tyr Lys
<210> 31
<211> 732
<212> DNA
<213> Artificial Sequence
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<221> CDS
<222> (1)..(732)
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                                                                   48
Met Cys Cys Cys Cys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete aee
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
                             40
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
                                             60
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
                                                                   240
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
                                                                   288
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
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				85					90					95		
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg Gly	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	gly ggc	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
	tac Tyr	aag Lys	tga													732
	)> 32  > 24															

<212> PRT

## <213> Artificial Sequence

<400> 32

Met Cys Cys Cys Cys Cys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215 220

Leu Leu Glu Phe Val Thr Ala Ala	Gly Ile Thr His Gly Met Asp Glu
225 230	235 240
Leu Tyr Lys	
<210> 33 <211> 732 <212> DNA <213> Artificial Sequence	
<220> <223> Description of Artificial	Sequence: Gln(CAA)5GFP
<220> <221> CDS <222> (1)(732)	
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gtc cca att ctc gtg gaa ctg gat o	ggc gat gtg aat ggg cac aaa ttt 96
Val Pro Ile Leu Val Glu Leu Asp o	Gly Asp Val Asn Gly His Lys Phe
20	25 30
tct gtc agc gga gag ggt gaa ggt g	gat gcc aca tac gga aag ctc acc 144
Ser Val Ser Gly Glu Gly Glu Gly 2	Asp Ala Thr Tyr Gly Lys Leu Thr
35 40	45
ctg aaa ttc atc tgc acc act gga a	aag ctc cct gtg cca tgg cca aca 192
Leu Lys Phe Ile Cys Thr Thr Gly 1	Lys Leu Pro Val Pro Trp Pro Thr
50 55	60
ctg gtc act acc ttc tct tat ggc g	gtg cag tgc ttt tcc aga tac cca 240
Leu Val Thr Thr Phe Ser Tyr Gly v	Val Gln Cys Phe Ser Arg Tyr Pro
65 70	75 80
gac cat atg aag cag cat gac ttt t	ttc aag agc gcc atg ccc gag ggc 288
Asp His Met Lys Gln His Asp Phe I	Phe Lys Ser Ala Met Pro Glu Gly
85	90 95
tat gtg cag gag aga acc atc ttt t	ttc aaa gat gac ggg aac tac aag 336
Tyr Val Gln Glu Arg Thr Ile Phe I	Phe Lys Asp Asp Gly Asn Tyr Lys

			100					105					110			
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
ctg Leu	tac Tyr		tga													732
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<212> PRT <213> Artificial Sequence

<400> 34

Met Gln Gln Gln Gln Ser Lys Gly Glu Glu Leu Phe Thr Gly Val

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Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80
Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly
Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys
Thr	Arg	Ala 115	Glu	Val	Lys	Phe	Glu 120	Gly	Asp	Thr	Leu	Val 125	Asn	Arg	Ile
Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His
Lys 145	Leu	Glu	Tyr	Asn	Tyr 150	Asn	Ser	His	Asn	Val 155	Tyr	Ile	Met	Ala	Asp 160
Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Il∈
Glu	Asp	Gly	Ser 180	Val	Gln	Leu	Ala	Asp 185	His	Tyr	Gln	Gln	Asn 190	Thr	Pro
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val
Leu 225	Leu	Glu	Phe	Val	Thr 230	Ala	Ala	Gly	Ile	Thr 235	His	Gly	Met	Asp	Glu 240
Leu	Tyr	Lys													

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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete ace
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
         35
                             40
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
                         55
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
                                                                   240
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
                                                                   288
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
                 85
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
                                                                   336
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
                                105
                                                     110
acc cgc gct gaa gtc aag ttc gaa ggt gac acc ctg gtg aat aga atc
                                                                   384
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Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile

		115					120					125				
	ctg Leu 130															432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
	gat Asp															576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	gly Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
	tac Tyr		tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215 220

Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240

Leu Tyr Lys

<210> 37 <211> 732

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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
tet gtc age gga gag ggt gaa ggt gat gec aca tac gga aag etc ace
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
         35
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
     50
                         55
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
                                                                   240
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
                     70
                                         75
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
                                                                   288
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
                 8.5
                                     90
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
                                                                   336
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
            100
                                105
acc ege get gaa gte aag tte gaa ggt gae acc etg gtg aat aga atc
                                                                   384
Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
                            120
                                                 125
gag ctg aag ggc att gac ttt aag gag gat gga aac att ctc ggc cac
                                                                   432
Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
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	130					135					140					
														gcc Ala		480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	gly ggg	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
-	tac Tyr	aag Lys	tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly  $85 \hspace{1.5cm} 90 \hspace{1.5cm} 95$ 

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
100 105

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val $210 \\ 215 \\ 220$ 

Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240

Leu Tyr Lys

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<211> 732

<212> DNA

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145	150	155	160
aag caa aag aat ggc Lys Gln Lys Asn Gly 165	atc aag gtc aac ttc Ile Lys Val Asn Phe 170	aag atc aga cac aac Lys Ile Arg His Asn 175	att 528 Ile
		tat caa cag aac act Tyr Gln Gln Asn Thr 190	
atc ggc gac ggc cct Ile Gly Asp Gly Pro 195	gtg ctc ctc cca gac Val Leu Leu Pro Asp 200	aac cat tac ctg tcc Asn His Tyr Leu Ser 205	acc 624 Thr
cag tct gcc ctg tct Gln Ser Ala Leu Ser 210	aaa gat ccc aac gaa Lys Asp Pro Asn Glu 215	aag aga gac cac atg Lys Arg Asp His Met 220	gtc 672 Val
ctg ctg gag ttt gtg Leu Leu Glu Phe Val 225	acc gct gct ggg atc Thr Ala Ala Gly Ile 230	aca cat ggc atg gac Thr His Gly Met Asp 235	gag 720 Glu 240
ctg tac aag tga Leu Tyr Lys			732
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Val Pro Ile Leu Val 20	Glu Leu Asp Gly Asp 25	Val Asn Gly His Lys 30	Phe
Ser Val Ser Gly Glu 35	Gly Glu Gly Asp Ala 40	Thr Tyr Gly Lys Leu 45	Thr
Leu Lys Phe Ile Cys 50	Thr Thr Gly Lys Leu 55	Pro Val Pro Trp Pro	Thr
Leu Val Thr Thr Phe			

65 70 75 80 Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arq His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 Leu Tyr Lys <210> 41 <211> 732 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Gly(GGA)5GFP <220> <221> CDS

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	t gtc r Val															144
ct Le	g aaa u Lys 50	Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ct Le 6	g gtc u Val 5	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
ga As	c cat p His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
ta Ty	t gtg r Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg Gly	aac Asn 110	tac Tyr	aag Lys	336
ac Th	c cgc r Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
ga Gl	g ctg u Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
аа Ly 14	g ctg s Leu 5	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aa Ly	g caa s Gln	aag Lys	aat Asn	ggc Gly	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe	aag Lys	atc Ile	aga Arg	cac His	aac Asn	att Ile	528

165		170	175
gag gat gga tcc gtg Glu Asp Gly Ser Val 180		His Tyr Gln Gln As	
atc ggc gac ggc cct Ile Gly Asp Gly Pro 195	gtg ctc ctc cca Val Leu Leu Pro 200	gac aac cat tac ct Asp Asn His Tyr Le 205	ng toc acc 624 Bu Ser Thr
cag tct gcc ctg tct Gln Ser Ala Leu Ser 210	aaa gat ccc aac Lys Asp Pro Asn 215	gaa aag aga gac ca Glu Lys Arg Asp H: 220	ac atg gtc 672 Ls Met Val
ctg ctg gag ttt gtg Leu Leu Glu Phe Val 225	acc gct gct ggg Thr Ala Ala Gly 230	atc aca cat ggc at Ile Thr His Gly Me 235	eg gac gag 720 et Asp Glu 240
ctg tac aag tga Leu Tyr Lys			732
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Ser Val Ser Gly Glu 35	Gly Glu Gly Asp	Ala Thr Tyr Gly Ly	s Leu Thr
	40	45	
Leu Lys Phe Ile Cys			
	Thr Thr Gly Lys	Leu Pro Val Pro Tr 60	p Pro Thr

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Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
                165
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
                        215
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
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Leu Tyr Lys
<210> 43
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	cca Pro															96
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ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg Gly	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat	gga	tcc	gtg	cag	ctg	gcc	gac	cat	tat	caa	cag	aac	act	cca	576

	180			185				190			
atc ggc gac Ile Gly Asp 195	ggc cct Gly Pro	gtg ctc Val Leu	ctc Leu : 200	cca ga Pro As	c aac p Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag tct gcc Gln Ser Ala 210	ctg tct Leu Ser	aaa gat Lys Asp 215	ccc a	aac ga Asn Gl	a aag u Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg ctg gag Leu Leu Glu 225	ttt gtg Phe Val	acc gct Thr Ala 230	gct ( Ala (	ggg at Gly Il	c aca e Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
ctg tac aag Leu Tyr Lys	tga										732
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Met Gly Gly 1	Leu Val 20	Glu Leu	Asp (	1 Gly As 25	0 p Val	Asn	Gly	His 30	15 Lys	Phe	
Met Gly Gly  1  Val Pro Ile  Ser Val Ser	Leu Val 20 Gly Glu	Glu Leu Gly Glu	Asp (Gly F	1 Gly As 25 Asp Al	0 p Val a Thr	Asn Tyr	Gly Gly 45	His 30 Lys	15 Lys Leu	Phe Thr	
Met Gly Gly  1  Val Pro Ile  Ser Val Ser  35  Leu Lys Phe	Leu Val 20 Gly Glu Ile Cys	Glu Leu Gly Glu Thr Thr 55	Asp Gly F	1 Gly As 25 Asp Al Lys Le	0 p Val a Thr u Pro	Asn Tyr Val 60	Gly Gly 45 Pro	His 30 Lys Trp	15 Lys Leu Pro	Phe Thr	
Met Gly Gly 1 Val Pro Ile Ser Val Ser 35 Leu Lys Phe 50 Leu Val Thr	Leu Val 20 Gly Glu Ile Cys Thr Phe	Glu Leu Gly Glu Thr Thr 55 Ser Tyr 70	Asp Gly A	1 Gly As 25 Asp Al Lys Le Val Gl	o Val a Thr u Pro n Cys 75 s Ser	Asn Tyr Val 60 Phe	Gly Gly 45 Pro	His 30 Lys Trp Arg	15 Lys Leu Pro	Phe Thr Thr Pro 80	

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Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
Leu Tyr Lys
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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
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96

Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
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ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly ggg	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu	cca Pro	gac Asp	aac Asn	cat His	tac Tyr	ctg Leu	tcc Ser	acc Thr	624

195 200 205 cag tot goo etg tot aaa gat eee aac gaa aag aga gae eac atg gte 672 Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 215 ctg ctg gag ttt gtg acc gct gct ggg atc aca cat ggc atg gac gag 720 Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu ctg tac aag tga 732 Leu Tyr Lys <210> 46 <211> 243 <212> PRT <213> Artificial Sequence <400> 46 Met Gly Gly Gly Gly Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 105 Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125 Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His

	130					135					140					
Lys 145	Leu	Glu	Tyr	Asn	Tyr 150	Asn	Ser	His	Asn	Val 155	Tyr	Ile	Met	Ala	Asp 160	
Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Ile	
Glu	Asp	Gly	Ser 180	Val	Gln	Leu	Ala	Asp 185	His	Tyr	Gln	Gln	Asn 190	Thr	Pro	
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr	
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val	
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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
tct	gtc	agc	gga	gag	ggt	gaa	ggt	gat	gcc	aca	tac	gga	aag	ctc	acc	144

Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
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ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
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tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly	aac Asn 110	tac Tyr	aag Lys	336
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gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg	gac Asp	cac His	atg Met	gtc Val	672

	210					215					220					
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		aag Lys	tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
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Leu	Lys 50	Phe	Ile	Суѕ	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80	
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Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys	
Thr	Arg	Ala 115	Glu	Val	Lys	Phe	Glu 120	Gly	Asp	Thr	Leu	Val 125	Asn	Arg	Ile	
Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His	
Lys 145	Leu	Glu	Tyr	Asn	Tyr 150	Asn	Ser	His	Asn	Val 155	Tyr	Ile	Met	Ala	Asp 160	

Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Ile	
Glu	Asp	Gly	Ser 180	Val	Gln	Leu	Ala	Asp 185	His	Tyr	Gln	Gln	Asn 190	Thr	Pro	
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr	
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val	
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	)> l> CI 2> (1		(732)	ł												
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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctq	aaa	ttc	atc	tgc	acc	act	qqa	aaq	ctc	cct	ata	сса	taa	cca	aca	192

Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
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	cat His															288
	gtg Val															336
	cgc Arg															384
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	ctg Leu															480
	caa Gln															528
	gat Asp															576
	ggc Gly															624
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ctg Leu	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr	cat His	ggc Gly	atg Met	gac Asp	gag Glu	720

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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile

150

165

155

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Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
                                185
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
                            200
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
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Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
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                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
                                                                  144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
         35
                                                 45
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
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Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
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		atg Met														288
		cag Gln														336
	_	gct Ala 115	_	-	_		_		_		_					384
		aag Lys														432
		gaa Glu														480
		aag Lys														528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
		gac Asp 195														624
		gcc Ala														672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro \$180\$

Ile Gly Asp Gly Pro Val Leu Pro Asp Asn His Tyr Leu Ser Thr

		195					200					205				
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Leu	Tyr	Lys														
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	.> CE	_	(732)	)												
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														aaa Lys		96
														ctc Leu		144
														cca Pro		192
														tac Tyr		240
gac	cat	atg	aag	cag	cat	gac	ttt	ttc	aag	agc	gcc	atg	ccc	gag	ggc	288

Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly	
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro  $180 \\ \hspace{1.5cm} 185 \\ \hspace{1.5cm} 190 \\ \hspace{1.5cm}$ 

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215 220

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	Leu	Tyr	Lys														
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		1> C		(732	)												
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7	gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
ţ	ct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
I	ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
I	ctg Seu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
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t	at	gtg	cag	gag	aga	acc	atc	ttt	ttc	aaa	gat	gac	ggg	aac	tac	aag	336

Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys	
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gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
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cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	gly Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val

Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu

215

230

Leu Tyr Lys

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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
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Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
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tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
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Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
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ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
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Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
65
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gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
                                                                  288
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
                 85
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
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Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
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acc cgc gct gaa gtc aag ttc gaa ggt gac acc ctg gtg aat aga atc
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ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Val	Pro	Ile	Leu	Val	Glu	Leu	Asp	Gly	Asp	Val	Asn	Gly	His	Lys	Phe	

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Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80
Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly
Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys
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Lys 145	Leu	Glu	Tyr	Asn	Tyr 150	Asn	Ser	His	Asn	Val 155	Tyr	Ile	Met	Ala	Asp 160
Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Ile
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Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr
Gln	Ser	Ala	Leu	Ser	Lys	Asp	Pro	Asn	Glu	Lys	Arg	Asp	His	Met	Val

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Leu Tyr Lys

210

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tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete ace 1. Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45	44
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ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80	40
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acc cgc gct gaa gtc aag ttc gaa ggt gac acc ctg gtg aat aga atc Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125	84
gag ctg aag ggc att gac ttt aag gag gat gga aac att ctc ggc cac 43	32

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Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

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Leu Tyr Lys

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Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

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Leu Tyr Lys

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144 192 288 tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag 336 Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 acc cgc gct gaa gtc aag ttc gaa ggt gac acc ctg gtg aat aga atc Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 gag ctg aag ggc att gac ttt aag gag gat gga aac att ctc ggc cac Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 aag ctg gaa tac aac tat aac tcc cac aat gtg tac atc atg gcc gac 480 Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160 aag caa aag aat ggc atc aag gtc aac ttc aag atc aga cac aac att

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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80	
Asp																
	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly	

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Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
        1.15
Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
                        135
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
    210
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Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
                    230
Leu Tyr Lys
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<211> 732
<212> DNA
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<222> (1)..(732)
<400> 67
atg tta tta tta tta agc aag ggc gag gaa ctg ttc act ggc gtg
Met Leu Leu Leu Leu Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
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                                                         15
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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	GJ y ggg	cac His 30	aaa Lys	ttt Phe	96
tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	Gly ggc	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly ggg	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	aag Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc	ggc	gac	ggc	cct	gtg	ctc	ctc	сса	gac	aac	cat	tac	ctg	tcc	acc	624

Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr	
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
	tac Tyr		tga													732
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	)> 68 Leu		Leu	Leu 5	Leu	Ser	Lys	Gly	Glu 10	Glu	Leu	Phe	Thr	Gly 15	Val	
Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80	
Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly	

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile

120

105

100

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Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
                        135
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
                    150
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
    210
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Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
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Leu Tyr Lys
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<222> (1)..(732)
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                                     10
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
                                 25
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tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag	tct	gcc	ctg	tct	aaa	gat	ccc	aac	gaa	aag	aga	gac	cac	atg	gtc	672

Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val	
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
	tac Tyr		tga													732
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	0> 70															
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80	
Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly	
Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys	
Thr	Arg	Ala 115	Glu	Val	Lys	Phe	Glu 120	Gly	Asp	Thr	Leu	Val 125	Asn	Arg	Ile	
Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His	
Lys	Leu	Glu	Tyr	Asn	Tyr	Asn	Ser	His	Asn	Val	Tyr	Ile	Met	Ala	Asp	

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145
                  150
                                        155
                                                            160
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
                                    170
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
    210
                        215
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
                    230
                                        235
Leu Tyr Lys
<210> 71
<211> 732
<212> DNA
<213> Artificial Sequence
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<220>
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<222> (1)..(732)
<400> 71
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Met Lys Lys Lys Lys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
                                     10
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
                                 25
tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete ace
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
         35
                             40
                                                 45
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ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg Gly	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
Gin	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg	ctg	gag	ttt	gtg	acc	gct	gct	ggg	atc	aca	cat	ggc	atg	gac	gag	720

Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 230 ctg tac aag tga Leu Tyr Lys <210> 72 <211> 243 <212> PRT <213> Artificial Sequence <400> 72 Met Lys Lys Lys Lys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 105 110 Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 150

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile

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Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
Leu Tyr Lys
<210> 73
<211> 732
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Lys(AAG)5GFP
<220>
<221> CDS
<222> (1)..(732)
<400> 73
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                                                                   48
Met Lys Lys Lys Lys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
                                     10
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
tot gto ago gga gag ggt gaa ggt gat gco aca tac gga aag cto acc
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
                             40
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
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55

	gtc Val										240
	cat His										288
	gtg Val										336
	cgc Arg										384
	ctg Leu 130										432
_	ctg Leu	_						_	_	_	480
	caa Gln										528
	gat Asp										576
	ggc Gly										624
	tct Ser 210										672
	ctg Leu										720
ctg	tac	aag	tga								732

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Leu Tyr Lys
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<210> 74

<211> 243

<212> PRT

<213> Artificial Sequence

<400> 74

Met Lys Lys Lys Lys Ser Lys Gly Glu Glu Leu Phe Thr Gly Val

Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

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Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
Leu Tyr Lys
<210> 75
<211> 732
<212> DNA
<213> Artificial Sequence
<220>
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<220>
<221> CDS
<222> (1)..(732)
<400> 75
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                                                                   48
Met Phe Phe Phe Phe Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
                                 25
tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
                                                                  144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
                             40
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                  192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
                         55
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
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Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro

70

75

		atg Met														288
		cag Gln														336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
		gaa Glu														480
		aag Lys														528
		gga Gly														576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
-	tac Tyr	aag Lys	tga													732

<210> 76

- <211> 243
- <212> PRT
- <213> Artificial Sequence

<400> 76

Met Phe Phe Phe Phe Ser Lys Gly Glu Glu Leu Phe Thr Gly Val

Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 150 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val

210 215 220 Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 230 235 Leu Tyr Lys <210> 77 <211> 732 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Phe(TTC)5GFP <220> <221> CDS <222> (1)..(732) <400> 77 atg ttc ttc ttc ttc agc aag ggc gag gaa ctg ttc act ggc gtg Met Phe Phe Phe Phe Ser Lys Gly Glu Glu Leu Phe Thr Gly Val gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt 96 Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete ace 144 Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca 192 Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 55 ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca 240 Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc 288 Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90

tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg Gly	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	GJÀ āàà	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
	tac Tyr	aag Lys	tga													732

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Leu Tyr Lys

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<212> DNA
<213> Artificial Sequence
<220>
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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
         35
                             40
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
     50
                         55
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
                                                                   240
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
                                          75
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
                                                                   288
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
                                                                   336
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
                                105
                                                    110
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acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
	tac Tyr	aag Lys	tga													732
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Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 135 Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 150 Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 185 Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 200 Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 215

Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu

Leu Tyr Lys

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<210> 81
<211> 732
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Pro(CCG)5GFP
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<221> CDS
<222> (1)..(732)
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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                   96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete ace
                                                                   144
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
     50
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
                                                                   240
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
                     70
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
                                                                   288
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
                 85
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
                                                                   336
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
            100
                                105
acc cgc gct gaa gtc aag ttc gaa ggt gac acc ctg gtg aat aga atc
                                                                   384
Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
        115
                            120
                                                125
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_	_	_											_	gcc Ala	_	480
														aac Asn 175		528
														act Thr		576
		-							_				_	tcc Ser		624
														atg Met		672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
~	tac Tyr	aag Lys	tga													732
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<212> PRT

<213> Artificial Sequence

<400> 82

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Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly
Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys
Thr	Arg	Ala 115	Glu	Val	Lys	Phe	Glu 120	Gly	Asp	Thr	Leu	Val 125	Asn	Arg	Ile
Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His
Lys 145	Leu	Glu	Tyr	Asn	Tyr 150	Asn	Ser	His	Asn	Val 155	Tyr	Ile	Met	Ala	Asp 160
Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Ile
Glu	Asp	Gly	Ser 180	Val	Gln	Leu	Ala	Asp 185	His	Tyr	Gln	Gln	Asn 190	Thr	Pro
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val
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Leu	Tyr	Lys													
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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly gag	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432

aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	

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Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215 220

Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240

Leu Tyr Lys

<210> 85

<211> 732

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Pro(CGA)5GFP

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gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
_	tac Tyr	_	tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80	

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Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
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100 105 Asp Asp Gly Asn Tyr Lys

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val210 215 220

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Leu Tyr Lys

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Ser(AGC)5GFP

<220>

<221> CDS

<222> (1)..(732)

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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly ggg	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528

gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	gly ggg	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys

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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
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ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
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gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
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Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115

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Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
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Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
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Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
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                                 25
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ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
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	ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	ggg Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
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Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
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Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
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Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
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Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
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cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672

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gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa	gat Asp	gac Asp	Gly ggg	aac Asn 110	tac	aag Lys	336
acc Thr	c cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gaç Gli	g ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aaq Lys 145	g ctg s Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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ga: Gl:	g gat ı Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
at. Il	c ggc e Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
ca Gl:	g tct n Ser 210	Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
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	g tac u Tyr	_														732

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<213> Artificial Sequence

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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 150 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

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Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 235 230 235 240	
Leu Tyr Lys	
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tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45	144
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60	192
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80	240
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95	288

tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	ggg Gly	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
gag Glu	ctg Leu 130	aag Lys	ggc Gly	att Ile	gac Asp	ttt Phe 135	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 140	att Ile	ctc Leu	ggc Gly	cac His	432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
atc Ile	ggc	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	Gly	atc Ile	aca Thr 235	His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
_		aag Lys	_													732

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240 225 230 235 Leu Tyr Lys <210> 101 <211> 732 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Thr(ACC)5GFP <220> <221> CDS <222> (1)..(732) <400> 101 48 atq acc acc acc acc acc agc aag ggc gag gaa ctg ttc act ggc gtg Met Thr Thr Thr Thr Ser Lys Gly Glu Glu Leu Phe Thr Gly Val 96 gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 144 tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca 192 Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 288 gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 8.5 90 tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

					aag Lys											384
					gac Asp											432
					tat Tyr 150											480
					atc Ile											528
gag Glu	gat Asp	gga Gly	tcc Ser 180	gtg Val	cag Gln	ctg Leu	gcc Ala	gac Asp 185	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 190	act Thr	cca Pro	576
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					acc Thr 230											720
_	tac Tyr	aag Lys	tga													732
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Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 135 Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 200 Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215

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230

Leu Tyr Lys

225

235

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Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
             20
tot gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca
                                                                   192
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr
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ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro
                     70
                                                              80
 65
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc
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Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly
                 85
                                      90
                                                          95
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
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                                 105
                                                     1.1.0
acc ege get gaa gte aag tte gaa ggt gae acc etg gtg aat aga atc
Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
        115
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											aac Asn 140					432
											tac Tyr					480
											atc Ile					528
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											cat His					624
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~	tac Tyr	aag Lys	tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr  $195 \hspace{1.5cm} 200 \hspace{1.5cm} 205$ 

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Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240

Leu Tyr Lys

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														aaa Lys	96
														ctc Leu	144
														cca Pro	192
														tac Tyr	240
														gag Glu 95	288
														tac Tyr	336
														aga Arg	384
														ggc Gly	432

				aac Asn												480
				ggc Gly 165												528
				gtg Val												576
				cct Pro												624
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_	tac Tyr		tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Len	Lvs	Phe	Tle	Cvs	Thr	Thr	Glv	Luc	T.011	Pro	Val	Pro	Ψrn	Pro	Thr	

	50					55					60				
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80
Asp	His	Met	Lys	Gln 85	His	Asp	Phe	Phe	Lys 90	Ser	Ala	Met	Pro	Glu 95	Gly
Tyr	Val	Gln	Glu 100	Arg	Thr	Ile	Phe	Phe 105	Lys	Asp	Asp	Gly	Asn 110	Tyr	Lys
Thr	Arg	Ala 115	Glu	Val	Lys	Phe	Glu 120	Gly	Asp	Thr	Leu	Val 125	Asn	Arg	Ile
Glu	Leu 130	Lys	Gly	Ile	Asp	Phe 135	Lys	Glu	Asp	Gly	Asn 140	Ile	Leu	Gly	His
Lys 145	Leu	Glu	Tyr	Asn	Tyr 150	Asn	Ser	His	Asn	Val 155	Tyr	Ile	Met	Ala	Asp 160
Lys	Gln	Lys	Asn	Gly 165	Ile	Lys	Val	Asn	Phe 170	Lys	Ile	Arg	His	Asn 175	Ile
Glu	Asp	Gly	Ser 180	Val	Gln	Leu	Ala	Asp 185	His	Tyr	Gln	Gln	Asn 190	Thr	Pro
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val
Leu 225	Leu	Glu	Phe	Val	Thr 230	Ala	Ala	Gly	Ile	Thr 235	His	Gly	Met	Asp	Glu 240
Leu	Tyr	Lys													
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	caa Gln															528
	gat Asp															576
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Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
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<222> (1)..(732)

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Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
                    150
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
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			gga Gly													144
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ctg Leu 65	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser 70	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 75	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 80	240
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tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Gly ggg	aac Asn 110	tac Tyr	aag Lys	336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
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aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
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	tac Tyr	aag Lys	tga													732
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Val	Pro	Ile	Leu 20	Val	Glu	Leu	Asp	Gly 25	Asp	Val	Asn	Gly	His 30	Lys	Phe	
Ser	Val	Ser 35	Gly	Glu	Gly	Glu	Gly 40	Asp	Ala	Thr	Tyr	Gly 45	Lys	Leu	Thr	
Leu	Lys 50	Phe	Ile	Cys	Thr	Thr 55	Gly	Lys	Leu	Pro	Val 60	Pro	Trp	Pro	Thr	
Leu 65	Val	Thr	Thr	Phe	Ser 70	Tyr	Gly	Val	Gln	Cys 75	Phe	Ser	Arg	Tyr	Pro 80	

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Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
145
                    150
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
    210
                        215
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
                    230
                                        235
Leu Tyr Lys
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Met Tyr Tyr Tyr Tyr Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
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								aaa Lys	96
								ctc Leu	144
								cca Pro	192
								tac Tyr	240
								gag Glu 95	288
								tac Tyr	336
								aga Arg	384
								ggc Gly	432
								gcc Ala	480
								aac Asn 175	528
								act Thr	576

	~ ~	_					_				_	tcc Ser		624
_		_	_		_		_	_	_	_		atg Met	_	672
												gac Asp		720
_	tac Tyr	aag Lys	tga											732

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<211> 243

<212> PRT

<213> Artificial Sequence

<400> 112

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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile

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115
                            120
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Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
145
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
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Leu Tyr Lys
<210> 113
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Met Val Val Val Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val
                                     10
gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                  96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
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tct gtc agc gga Ser Val Ser Gly 35	gag ggt gaa Glu Gly Glu	ggt gat gcc a Gly Asp Ala T 40	ca tac gga aag Thr Tyr Gly Lys 45	ctc acc 144 Leu Thr
			cct gtg cca tgg Pro Val Pro Trp 60	
			gc ttt tcc aga Cys Phe Ser Arg 75	
			agc gcc atg ccc Ser Ala Met Pro	
	Arg Thr Ile		gat gac ggg aac Asp Asp Gly Asn 110	
			acc ctg gtg aat Thr Leu Val Asn 125	
			gga aac att ctc Gly Asn Ile Leu 140	
		Ser His Asn V	gtg tac atc atg Val Tyr Ile Met 155	
			aag atc aga cac Lys Ile Arg His	
	Val Gln Leu		tat caa cag aac Tyr Gln Gln Asn 190	
		_	aac cat tac ctg Asn His Tyr Leu 205	

cag tct gcc ctg tct aaa Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210       672         ctg ctg ctg gag ttt gtg acc gct gct ggt atc acc act ggc atg gac gac gaz 225       220         ctg tac aag tga Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225       720         ctg tac aag tga Leu Tyr Lys       732         ctg tac aag tga Leu Tyr Lys       732         c210> 114
Leù Leù Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225  ctg tac aag tga Leu Tyr Lys  732  <210> 114 <2211> 243 <212> PRT <213> Artificial Sequence  <400> 114 Met Val Val Val Val Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val 1
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Met Val Val Val Val Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val 1 Sor Val 5
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 Phe Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 Phis Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 95 Phr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 Phe Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 80 Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 95 Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 80  Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 95  Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100  Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85  Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100  Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile
100 105 110  Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile

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Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
145
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
                     230
Leu Tyr Lys
<210> 115
<211> 732
<212> DNA
<213> Artificial Sequence
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<221> CDS
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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt
                                                                       96
Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe
                                   25
              20
tet gte age gga gag ggt gaa ggt gat gee aca tae gga aag ete ace
Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr
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35 40 45 ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc 288 Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag 336 Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys acc ege get gaa gte aag tte gaa ggt gae acc etg gtg aat aga ate 384 Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 gag ctg aag ggc att gac ttt aag gag gat gga aac att ctc ggc cac 432 Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 aag ctg gaa tac aac tat aac tcc cac aat gtg tac atc atg gcc gac 480 Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 aag caa aag aat ggc atc aag gtc aac ttc aag atc aga cac aac att 528 Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 gag gat gga tcc gtg cag ctg gcc gac cat tat caa cag aac act cca 576 Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 atc ggc gac ggc cct gtg ctc ctc cca gac aac cat tac ctg tcc acc 624 Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 cag tot goo ctg tot aaa gat coo aac gaa aag aga gac cac atg gto Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215

ctg ctg gag ttt gtg acc gct gct ggg atc aca cat ggc atg gac gag Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240	720
ctg tac aag tga Leu Tyr Lys	732
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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45	
Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 60	
Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80	
Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95	
Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110	
Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125	
Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140	
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160	

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175														
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190														
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205														
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215 220														
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240														
Leu Tyr Lys														
<210> 117 <211> 732 <212> DNA <213> Artificial Sequence														
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<pre>&lt;220&gt; &lt;221&gt; CDS &lt;222&gt; (1)(732)  &lt;400&gt; 117 atg gtg gtg gtg gtg agc aag ggc gag gaa ctg ttc act ggc gtg Met Val Val Val Val Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val</pre>														

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ctg gtc ac Leu Val Th 65	et acc ttc tc nr Thr Phe Se 7	r Tyr Gly Va	tg cag tgc ttt al Gln Cys Phe 75	tcc aga tac Ser Arg Tyr	cca 240 Pro 80
			tc aag agc gcc he Lys Ser Ala 90		
		r Ile Phe Pl	tc aaa gat gac he Lys Asp Asp 05		-
	la Ğlu Val Ly		gt gac acc ctg ly Asp Thr Leu		
			ag gat gga aac lu Asp Gly Asn 140		
		r Asn Ser H	eac aat gtg tac lis Asn Val Tyr 155		-
			ac ttc aag atc sn Phe Lys Ile 170		
		n Leu Ala A	gac cat tat caa asp His Tyr Gln 85		
	sp Gly Pro Va		cca gac aac cat Pro Asp Asn His		
			ac gaa aag aga Asn Glu Lys Arg 220		
		r Ala Ala G	ggg atc aca cat Gly Ile Thr His 235		

ctg tac aag tga Leu Tyr Lys 732

<210> 118

<211> 243

<212> PRT

<213> Artificial Sequence

<400> 118

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Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro

			180					185					190			
Ile	Gly	Asp 195	Gly	Pro	Val	Leu	Leu 200	Pro	Asp	Asn	His	Tyr 205	Leu	Ser	Thr	
Gln	Ser 210	Ala	Leu	Ser	Lys	Asp 215	Pro	Asn	Glu	Lys	Arg 220	Asp	His	Met	Val	
Leu 225	Leu	Glu	Phe	Val	Thr 230	Ala	Ala	Gly	Ile	Thr 235	His	Gly	Met	Asp	Glu 240	
Leu	Tyr	Lys														
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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
tct Ser	gtc Val	agc Ser 35	gga Gly	gag Glu	ggt Gly	gaa Glu	ggt Gly 40	gat Asp	gcc Ala	aca Thr	tac Tyr	gga Gly 45	aag Lys	ctc Leu	acc Thr	144
ctg Leu	aaa Lys 50	ttc Phe	atc Ile	tgc Cys	acc Thr	act Thr 55	gga Gly	aag Lys	ctc Leu	cct Pro	gtg Val 60	cca Pro	tgg Trp	cca Pro	aca Thr	192
ctg Leu	gtc Val	act Thr	acc Thr	ttc Phe	tct Ser	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro	240

65					70					75					80	
														gag Glu 95		288
														tac Tyr		336
acc Thr	cgc Arg	gct Ala 115	gaa Glu	gtc Val	aag Lys	ttc Phe	gaa Glu 120	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 125	aat Asn	aga Arg	atc Ile	384
														ggc Gly		432
														gcc Ala		480
														aac Asn 175		528
														act Thr		576
atc Ile	ggc Gly	gac Asp 195	ggc Gly	cct Pro	gtg Val	ctc Leu	ctc Leu 200	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 205	ctg Leu	tcc Ser	acc Thr	624
cag Gln	tct Ser 210	gcc Ala	ctg Leu	tct Ser	aaa Lys	gat Asp 215	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 220	gac Asp	cac His	atg Met	gtc Val	672
ctg Leu 225	ctg Leu	gag Glu	ttt Phe	gtg Val	acc Thr 230	gct Ala	gct Ala	Gly	atc Ile	aca Thr 235	cat His	ggc Gly	atg Met	gac Asp	gag Glu 240	720
_	tac Tyr	aag Lys	tga													732

- <210> 120
- <211> 243
- <212> PRT
- <213> Artificial Sequence

<400> 120

Met Val Val Val Val Ser Lys Gly Glu Glu Leu Phe Thr Gly Val 1 5 10 15

Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30

Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45

Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60

Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80

Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95

Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys
100 105 110

Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125

Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His 130 135 140

Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp 145 150 155 160

Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile 165 170 175

Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro 180 185 190

Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr 195 200 205

Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val 210 215 220														
Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu 225 230 235 240														
Leu Tyr Lys														
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gtc cca att ctc gtg gaa ctg gat ggc gat gtg aat ggg cac aaa ttt Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe 20 25 30	96													
tct gtc agc gga gag ggt gaa ggt gat gcc aca tac gga aag ctc acc Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45	144													
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60	192													
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80	240													
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc	288													

							90				95		
		cag Gln											336
		gct Ala 115											384
		aag Lys											432
		gaa Glu											480
_		aag Lys			_	_		_		_			528
		gga Gly											576
		gac Asp 195											624
_		gcc Ala	-		_		_	_	_	_	_	-	672
		gag Glu											720
_	tac Tyr	aag Lys	tga										732

<210> 122 <211> 732

<212> DNA <213> Artificial Sequence														
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tot gto ago gga gag ggt gaa ggt gat goo aca tac gga aag oto aco Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr 35 40 45	144													
ctg aaa ttc atc tgc acc act gga aag ctc cct gtg cca tgg cca aca Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr 50 55 60	192													
ctg gtc act acc ttc tct tat ggc gtg cag tgc ttt tcc aga tac cca Leu Val Thr Thr Phe Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro 65 70 75 80	240													
gac cat atg aag cag cat gac ttt ttc aag agc gcc atg ccc gag ggc Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly 85 90 95	288													
tat gtg cag gag aga acc atc ttt ttc aaa gat gac ggg aac tac aag Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys 100 105 110	336													
acc cgc gct gaa gtc aag ttc gaa ggt gac acc ctg gtg aat aga atc Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile 115 120 125	384													
gag ctg aag ggc att gac ttt aag gag gat gga aac att ctc ggc cac	432													

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Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His
aag ctg gaa tac aac tat aac tcc cac aat gtg tac atc atg gcc gac
                                                                   480
Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp
                    150
aag caa aag aat ggc atc aag gtc aac ttc aag atc aga cac aac att
                                                                   528
Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile
                                    170
gag gat gga tcc gtg cag ctg gcc gac cat tat caa cag aac act cca
                                                                   576
Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro
                                185
atc ggc gac ggc cct gtg ctc ctc cca gac aac cat tac ctg tcc acc
                                                                   624
Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr
        195
                            200
cag tot goo ctg tot aaa gat coo aac gaa aag aga gac cac atg gto
                                                                   672
Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His Met Val
ctg ctg gag ttt gtg acc gct gct ggg atc aca cat ggc atg gac gag
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Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu
225
                    230
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ctg tac aag tga
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Leu Tyr Lys
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gtc Val	cca Pro	att Ile	ctc Leu 20	gtg Val	gaa Glu	ctg Leu	gat Asp	ggc Gly 25	gat Asp	gtg Val	aat Asn	ggg Gly	cac His 30	aaa Lys	ttt Phe	96
														ctc Leu		144
														cca Pro		192
														tac Tyr		240
gac Asp	cat His	atg Met	aag Lys	cag Gln 85	cat His	gac Asp	ttt Phe	ttc Phe	aag Lys 90	agc Ser	gcc Ala	atg Met	ccc Pro	gag Glu 95	ggc Gly	288
tat Tyr	gtg Val	cag Gln	gag Glu 100	aga Arg	acc Thr	atc Ile	ttt Phe	ttc Phe 105	aaa Lys	gat Asp	gac Asp	Glà aaa	aac Asn 110	tac Tyr	aag Lys	336
														aga Arg		384
														ggc Gly		432
aag Lys 145	ctg Leu	gaa Glu	tac Tyr	aac Asn	tat Tyr 150	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 155	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 160	480
aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 165	atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 170	aag Lys	atc Ile	aga Arg	cac His	aac Asn 175	att Ile	528
gag	gat	gga	tcc	gtg	cag	ctg	gcc	gac	cat	tat	caa	cag	aac	act	cca	576

Glu Asp Gly	Ser Val Gli 180	n Leu Ala Asp 185	-	ln Asn Thr Pro 190	
			Asp Asn His T	ac ctg tcc acc 62 Yr Leu Ser Thr 05	4
cag tct gcc Gln Ser Ala 210	ctg tct aaa Leu Ser Lya	a gat ccc aac 3 Asp Pro Asn 215	gaa aag aga g Glu Lys Arg A 220	ac cac atg gtc 67 sp His Met Val	'2
ctg ctg gag Leu Leu Glu 225	ttt gtg acc Phe Val Thi 230	: Ala Ala Gly	atc aca cat of Ile Thr His G	gc atg gac gag 72 ly Met Asp Glu 240	0 :0
ctg tac aag Leu Tyr Lys	tga			73	32
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Met Ser Lys	Gly Glu Glu	Leu Phe Thr	Gly Val Val F	ro Ile Leu Val	
gaa ctg gat Glu Leu Asp	ggc gat gtc Gly Asp Val 20	g aat ggg cac . Asn Gly His 25	aaa ttt tct g Lys Phe Ser V	tc agc gga gag 96 al Ser Gly Glu 30	
ggt gaa ggt Gly Glu Gly 35	gat gcc aca Asp Ala Thi	tac gga aag Tyr Gly Lys 40	ctc acc ctg a Leu Thr Leu I	aa ttc atc tgc 14 ys Phe Ile Cys 45	4

														acc Thr		192
tct Ser 65	tat Tyr	ggc Gly	gtg Val	cag Gln	tgc Cys 70	ttt Phe	tcc Ser	aga Arg	tac Tyr	cca Pro 75	gac Asp	cat His	atg Met	aag Lys	cag Gln 80	240
														gag Glu 95		288
														gaa Glu		336
aag Lys	ttc Phe	gaa Glu 115	ggt Gly	gac Asp	acc Thr	ctg Leu	gtg Val 120	aat Asn	aga Arg	atc Ile	gag Glu	ctg Leu 125	aag Lys	ggc Gly	att Ile	384
gac Asp	ttt Phe 130	aag Lys	gag Glu	gat Asp	gga Gly	aac Asn 135	att Ile	ctc Leu	ggc Gly	cac His	aag Lys 140	ctg Leu	gaa Glu	tac Tyr	aac Asn	432
tat Tyr 145	aac Asn	tcc Ser	cac His	aat Asn	gtg Val 150	tac Tyr	atc Ile	atg Met	gcc Ala	gac Asp 155	aag Lys	caa Gln	aag Lys	aat Asn	ggc Gly 160	480
atc Ile	aag Lys	gtc Val	aac Asn	ttc Phe 165	aag Lys	atc Ile	aga Arg	cac His	aac Asn 170	att Ile	gag Glu	gat Asp	gga Gly	tcc Ser 175	gtg Val	528
cag Gln	ctg Leu	gcc Ala	gac Asp 180	cat His	tat Tyr	caa Gln	cag Gln	aac Asn 185	act Thr	cca Pro	atc Ile	ggc Gly	gac Asp 190	ggc Gly	cct Pro	576
gtg Val	ctc Leu	ctc Leu 195	cca Pro	gac Asp	aac Asn	cat His	tac Tyr 200	ctg Leu	tcc Ser	acc Thr	cag Gln	tct Ser 205	gcc Ala	ctg Leu	tct Ser	624
aaa Lys	gat Asp 210	ccc Pro	aac Asn	gaa Glu	aag Lys	aga Arg 215	gac Asp	cac His	atg Met	gtc Val	ctg Leu 220	ctg Leu	gag Glu	ttt Phe	gtg Val	672
acc	gct	gct	ggg	atc	aca	cat	ggc	atg	gac	gag	ctg	tac	aag	tga		717

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Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu 20 25 30

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe 50 55 60

Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln 65 70 75 80

His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg 85 90 95

Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile 115 120 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn 130 135 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly 145 150 155 160

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val 165 170 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
180 185 190

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Val Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
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Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
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primer					
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	primer		
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